

INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

JJG 690-2003

Replacing JJG 690-1990

Verification Regulation of High Insulation Resistance Meters (English Translation)

Issued on: September 23, 2003

Implemented on: March 23, 2004

Issued by: The General Administration of Quality Supervision, Inspection and Quarantine issued, This verification procedure was approved by the General Administration of Quality Supervision, Inspection and Quarantine on September 23, 2003.

Table of Contents

1 Scope (1)
2 Citations (1)
3 Noun terms (1)
4 Overview (1)
4.1 Composition of high resistance meter (1)
4.2 Calculation formula for measuring resistance with high resistance meter (1)
4.3 Type of high resistance meter (2)
5 Metrological performance requirements (2)
5.1 Basic error of resistance measurement (2)
5.2 Accuracy level (2)
5.3 Terminal voltage (3)
5.4 Repeatability (3)
6 General technical requirements (3)
6.1 Appearance (3)
6.2 Marks (3)
6.3 Display (3)
6.4 Resolution (3)
6.5 Terminal voltage ripple content (4)
6.6 Insulation resistance (4)
6.7 Dielectric strength (4)
7 Measuring instrument control (4)
7.1 Verification conditions (4)
7.2 Verification project (4)
7.3 Verification method (5)
7.4 Processing of verification results (10)
7.5 Verification cycle (11)
Appendix A Basic Structure of High Resistance Meter (12)
Appendix B Verification of the basic error of the high resistance meter by voltage compensation method (15)
Appendix C Verification of the basic error of high resistance meter by current and voltage method (17)
Appendix D High Resistance Meter Verification Certificate Page Format (19)
Appendix E High-resistance meter verification result notice page format (20)

Appendix F High Resistance Meter Verification Original Record (21)

7.5 Verification cycle (11)

Appendix A Basic Structure of High Resistance Meter (12)

Appendix B Verification of the basic error of the high resistance meter by voltage compensation method (15)

Appendix C Verification of the basic error of high resistance meter by current and voltage method (17)

Appendix D High Resistance Meter Verification Certificate Page Format (19)

Appendix E High-resistance meter verification result notice page format (20)

Appendix F High Resistance Meter Verification Original Record (21)

High insulation resistance measuring instrument (high resistance meter) verification procedure

1 Scope

This procedure is applicable to the test amplifier in the machine, its DC rated working voltage is not more than 1000V, and can be directly measured.

Digital indication and analog indication high insulation resistance measuring instrument with a capacity of 1000Mohm or more (hereinafter referred to as high resistance meter) First verification, follow-up verification and inspection in use.

This procedure does not apply to the verification of insulation resistance meters and ohmmeters. This procedure does not involve the inspection of high resistance meter measuring electrodes.

set.

2 Citations

This procedure refers to the following documents.

JJF1001-1998 General Terms and Definitions JJF1059-1999 "Measurement and Expression of Measurement Uncertainty" GB/T 13983-92 "Basic Terminology of Instrumentation" GB 4793-1995 "Safety requirements for electrical equipment for measurement, control and laboratory use" GB/T 14913-94 "DC digital voltmeter and DC analog-to-digital converter" Note. When using this procedure, care should be taken to use the current valid version of the above cited documents.

3 noun terms

3.1 High insulation resistance measuring instrument Direct measurement of insulation resistance values of insulating materials, general electrical products and electronic components, and high value resistors Electrical measuring instrument for resistance values. There are test amplifiers and indicating instruments in the instrument, and the DC rated working voltage is not large.

At 1000V.

3.2 Rated voltage

The nominal value of the output voltage at the open end of the measuring terminal.

3.3 terminal voltage Measure the measured value of the output voltage when the terminal is in the open state.

4 Overview

4.1 Composition of high resistance meter A high resistance meter is generally composed of three parts.

- a) a DC voltage source;
- b) a high input impedance DC amplifier;
- c) Indicate the meter.

See Appendix A for the basic structure and principles.

4.2 Calculation formula for measuring resistance with high resistance meter.